Making the Move to SaaS: 10 Key Technical Considerations

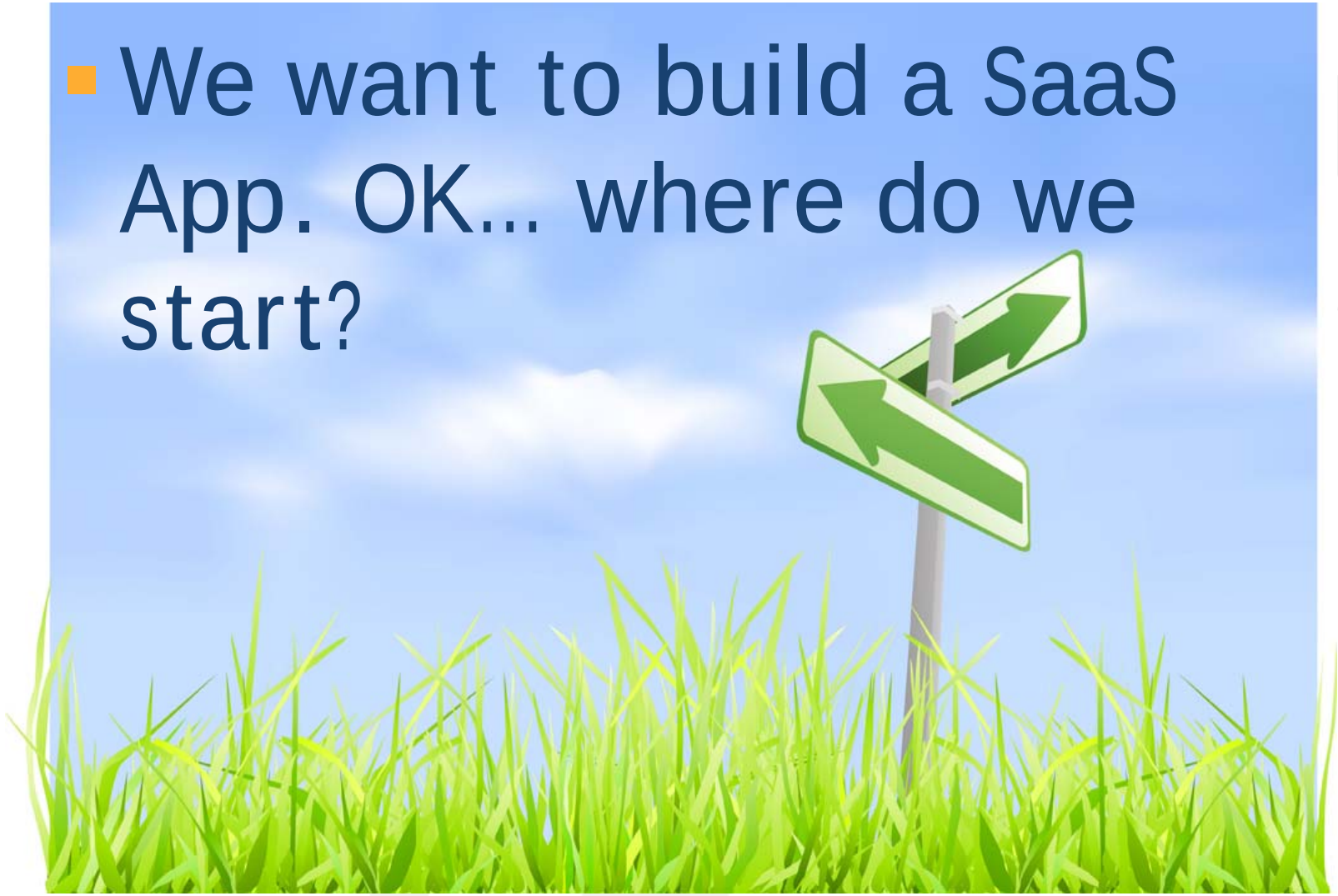
Luis Aburto
Michael Dunham

March 25, 2009

Who is Scio Consulting?

- **SaaS Enablement Professionals**
  - » **SaaS Business and Technical Consulting**
  - » **SaaS Product Development Services**
  - » **SaaS Infrastructure Mgmt and Operations**

- We want to build a SaaS App. OK… where do we start?

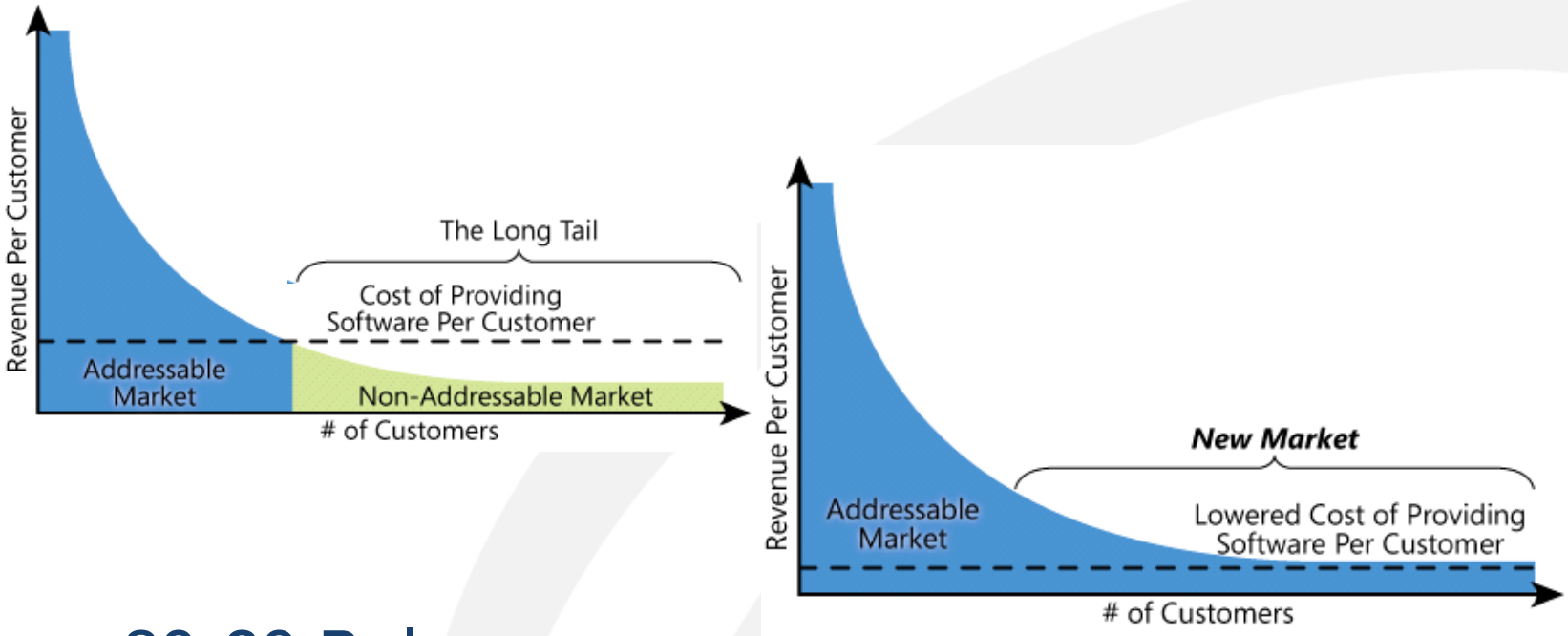


1- Selecting the Feature Set

- Is there an existing on-premise version of the app?
- Who is the target customer for the SaaS app?
  - » Same as for on-premise?
  - » New target?
- What is the purpose of creating the SaaS app?
  - » Offers opportunity to enter new markets?
  - » Stop losing clients?
  - » Expand reach?
- Consider
  - » Business analytics and metrics
  - » Mobile devices

SaaS Feature Set

- Develop for the Long Tail



- 80-20 Rule
  - » 20% of the features provide the 80% of the value for end users

2 – Identify gaps in skill set for building and operating a SaaS offering

Skills for Building

- Product Management
- Web Architecture & Development
- Web/RIA UI Design
- Infrastructure Architecture
- Web Testing

Skills for Operating

- Web-based marketing & sales
- Infrastructure management
- Web application management & performance monitoring
- Web-based customer service and technical support

3 - Define right level of "SaaSification"

"SaaSification" Levels

Characteristic	Hosted (ASP Model)	Application Virtualization Approach	Full SaaS Approach
Tenancy Model	Single Tenant	Single Tenant with Tenant Mgmt. Tools	Multi-tenant
Modification Required to Existing App	Minimal	Minimal	Moderate to Extensive
Operative Overhead	Highest	Moderate	Lowest
Scalability of the Approach	Lowest	Low	Highest
Initial Investment	Lowest	Moderate	Highest

SaaSification level – cont'd

- Application Virtualization tools
  - » Wrapped Apps
  - » Parallels
  - » Citrix
  - » Etc.
- Considerations
  - » Is there legacy code that could be leveraged or that would be difficult to re-write?
  - » How many new implementations per year are forecasted?
  - » Has the SaaS model been proven in the target market?

4 – Incorporate key technical architecture aspects of SaaS

- Multi-tenancy
- Scalability
  - **Load balancing**
  - **Routing**
- Availability
- Performance
- Configuration-driven Customization
  - **look and feel**
  - **Functionality**
- Integration
- Security
  - **Identity management**
- Usability
- Communication
  - **e-mail, sms, etc.**
- Globalization
- Audit and compliance
- Backup and recovery

These factors influence **App Architecture** as well as **Infrastructure Architecture**

5 – Include SaaS-specific "must have" functionality

- Pricing Engine
- Billing Engine & Payment processing
- Tenant and Subscription Management
- Service Provisioning
- Usage and Performance Monitoring
- Subscriber Management & Self-Service

This functionality takes from 20 to 50% of The development effort of a SaaS App

6 - Leverage commercial SaaS components and services

- **Billing**
  - » OpSource Billing CLM, Zuora, Vindicia
- **Customer Management**
  - » OpSource Billing CLM (Customer Lifecycle Management), Aria Systems
- **Payment Processing**
  - » Paypal, etc.
- **Monitoring**
  - » TrustSaaS, Absolute Performance SaaSMonitor.com
- **Integration**
  - » Boomi, Cast Iron Systems
- **Analytics**
  - » Sonoa

OpSource Billing CLM™

Zuora Powering the Business Cloud ™

vindicia

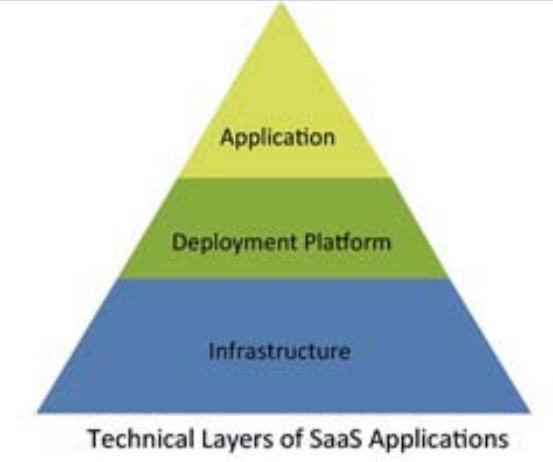
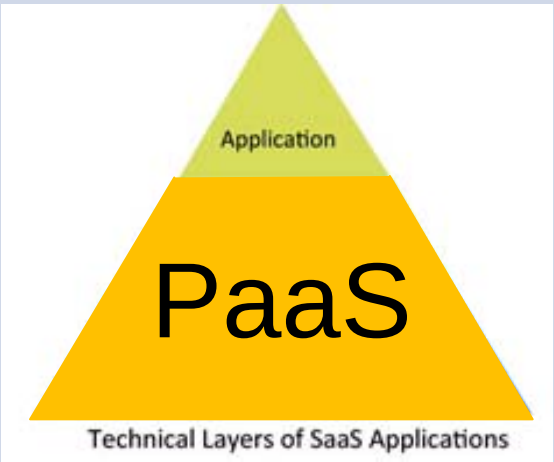
CAST IRON SYSTEMS

BOOMI®

sonoa

aria®

7 - Choose a technology stack and/or PaaS

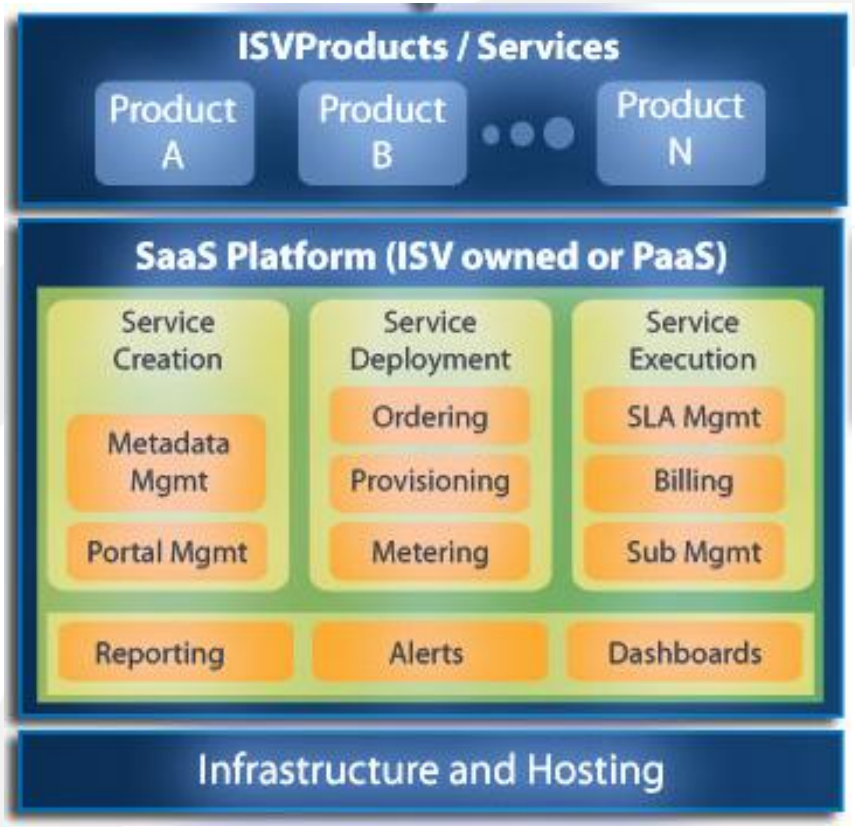
From the Ground Up	Through a PaaS (Platform as a Service)
	
Platform Examples: • LAMP • Win, IIS, ASP.NET, SQL Server • Ruby on Rails	**PaaS Examples:** • SaaSGrid • Force.com • Google App Engine, Bungee Lab
Hosting Alternatives: • In-house • Co-location • Cloud Computing (EC2, GoGrid)	**Hosting:** • Included

SaaS Technology Stack Details

Customer-facing
Application development
(Ex: in-house, Scio)

PaaS or
Third-Party Services

IaaS/PaaS Services



Choosing a technology stack and/or PaaS

- Considerations
  - » Match with available in-house expertise
  - » Is our target market part of a PaaS marketplace?
  - » Speed to market and development cost savings
  - » Trade-off between benefits of PaaS and dependence on PaaS provider
  - » Contingency options – what happens if the PaaS provider goes out of business?
  - » Develop infrastructure operations expertise in-house, or use managed hosting or a hosted PaaS?

8 - Select a hosting platform and/or provider

- **In-house Datacenter**
- **Co-location**
  - » Managed Hosting
    - Peer1, Rackspace, Bluelock, etc.
  - » Un-managed Hosting
    - ServerBeach, The Planet, etc.
  - » Value-added Managed Hosting
    - OpSource
- **Cloud Computing**
  - » Amazon EC2, GoGrid, Mosso, etc.
- **Included with PaaS**
  - » SaaSGrid, Force.com, etc.

9 – Prepare for technical operations of a SaaS business

- Testing/QA/QC
- Release cycles
  - How do we manage maintenance windows?
  - How do we manage upgrades and new functionality without affecting customers?
- Hosting (Infrastructure)
  - Performance monitoring
  - Up-time
- Reliability, replication and recovery
- Compliance and auditing
- Contract management
- Customer Service

10 - Agile Fitness for SaaS

- SaaS enables
  - » Usage Tracking
  - » Web 2.0 Communications
  - » User driven product design
  - » Upgrades generally available
- An iterative development process works best for SaaS, like Agile development

Key Takeaways

Key Point #1

Developing SaaS *successfully* involves *a lot more* than putting your application on the Web.

Key Point #2

Feature set must be aligned with vision and strategy of the new SaaS app

And

Think Web!

Key Point #3

Identify gaps in your in-house skill set and define how you are going to fill them.

Key Point #4

True Multi-tenant SaaS is ideal

but

in some cases partial/hybrid solutions may be appropriate

Key Point #5

Get your Architecture right upfront.

Making corrections along the way will be complex and expensive.

Key Point #6

Creating all the “SaaS plumbing” requires significant effort.

Plan for it.

Key Point #7

Hosting alternatives abound.

But not all hosting was born equal.

Go with the highest level of service you can afford.

Key Point #8

- Selecting the *right* PaaS *may*
  - » Simplify technical decision process
  - » Accelerate time to market
  - » Reduce development and operating costs

- SaaS Add-ons (monitoring, billing,etc.) can save time and money while adding value to your operations

Conclusions

- SaaS is a different ball game
- There is no magic, just a learning curve
- Build vs Buy applies to expertise, tools, platforms, etc.
- Good luck!

Luis Aburto, CEO
408.404.3897 x 254
laburto@sciodev.com

Michael Dunham
Principal Consultant
408.404-3897 x 603
mdunham@sciodev.com

http://www.sciodev.com